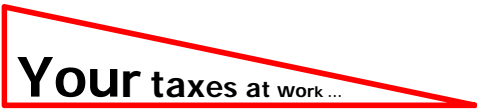


Outbreak Investigations

Infectious Disease Epidemiology Section
Office of Public Health
Louisiana Dept of Health & Hospitals
800-256-2748
www.infectiousdisease.dhh.louisiana.gov



Outbreaks

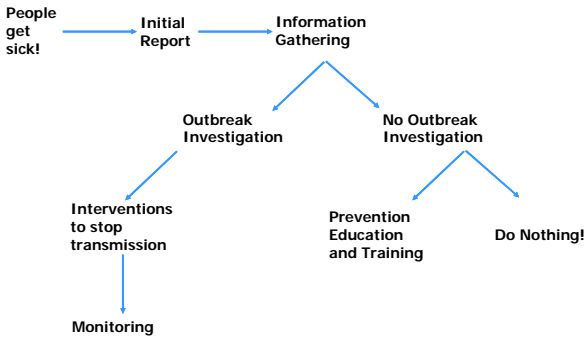
What is an outbreak?

An outbreak or an epidemic is an increase in disease above what is expected in a specific population at a specific time.

How do we determine if there is an outbreak going on?

Disease Surveillance Data

Outbreak Timeline



Steps of an Outbreak Investigation

- Surveillance system to keep track of infections/illness
 - Electronic data system that keeps track of positive laboratory results, diagnosis
- Recognize cluster/outbreak/unexpected number of illness/infection
 - Manually check the numbers
 - Algorithm in the system detects increase in cases
 - Report from the public

Disease Surveillance

Two types of Surveillance:

- **Passive Surveillance** – Routine reporting of cases to health departments by healthcare providers.
- **Active Surveillance** – Health departments solicit cases from healthcare providers, usually when an epidemic is suspected, in progress, or winding down.

Steps of an Outbreak Investigation

- **Threshold that would trigger an investigation**
 - What triggers an investigation?
 - What constitutes an outbreak?
 - Depends on the pathogen

Cluster/outbreak is Identified

- **Verify the diagnosis/pathogen/infection**
 - Lab confirmed?
 - If possible, do PFGE patterns match?
- **Collect additional information on cases**
 - demographics, hospital stay history, location of bed, medical history, carrier status, etc
- **Establish a case definition**

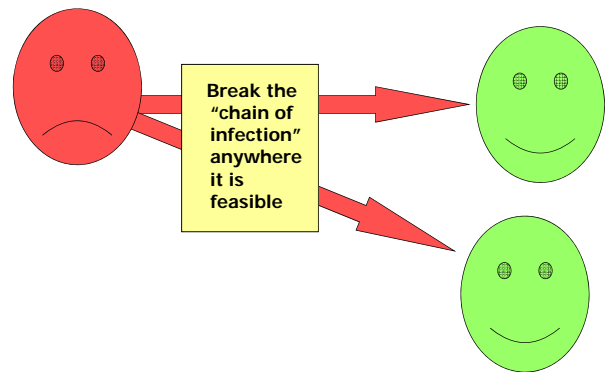
Cluster/outbreak is Identified

- **Create a timeline for each case**
 - When were they admitted, relevant lab results, symptom onset, transfers, procedures, etc
- **Look for commonalities between the cases**
 - Using information on cases, lab results and the timeline, look for commonalities between cases

Prevention

- Implement control measures to prevent spread of infection/additional cases
 - Depends on pathogen
- Implement control measures to prevent future cases

Prevention



Communication

- Most outbreak investigations have some urgency
- Public, public health officials, other officials, hospital management...
- They are concerned
- They want to find out the cause and the remedy applied ASAP
- Urgency should not translate into panic & sloppy investigation
- Time is necessary
 - To collect the information
 - To locate the cases
 - To run lab tests
- Overanxious people need to be told about the process and estimated time to carry out a proper investigation
- If preliminary prevention was addressed: NO PROBLEMS

Types of Outbreaks at Hospitals

HAI pathogens- Acinetobacter; C. diff; CRE; Klebsiella; Pseudomonas; Staphylococcus aureus; VISA/VRSA; VRE

Norovirus- among patients and staff

Legionella- potable water; decorative fountains

Foodborne- cafeteria

Unexpected- Listeria and ice cream; Mucormycosis and linen; contaminated equipment or drugs

Injection Safety



Injection Safety

Injection Practices:

- Needles are used for only one patient
- Syringes are used for only one patient
- Medication vials are always entered with a new needle
- Medication vials are always entered with a new syringe
- Multi-dose injectable medications are used for only one patient